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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,988	12/17/2003	Joost Jeroen Ottens	081468-0307259	4803
909	7590	12/14/2004	EXAMINER	
PILLSBURY WINTHROP, LLP P.O. BOX 10500 MCLEAN, VA 22102			NGUYEN, HUNG	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/736,988	Applicant(s) OTTENS ET AL.	
	Examiner Hung Henry V Nguyen	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) 14-18 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 17 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of group I (claims 1-13) in the reply filed on November 19, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the

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reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claim 13 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Kondo (U.S.Pat. 6,710,857).

As to claim 13, Kondo discloses an article support (WH) to support a flat article (W) to place in a beam path of radiation (IL) and comprising all basic features of the instant claim such as: a clamp (see figure 1A) to clamp the article to said article support wherein the clamp is provided with a plurality of zones (1) to create a locally adjusted pressure so as to provide a local bending moment to locally bend the article.

4. Claims 1-2, and 5-13 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Taniguchi et al (US 2004/0080734 A1).

With respect to claims 1 and 13, Taniguchi discloses an article support (37) to support a flat article (W) to place in a beam path of radiation (see figure 6) and comprising all basic features of the instant claims such as: a clamp (see figure 16) to clamp the article to said article support wherein the clamp is provided with a plurality of zones (51-55) located around a circumference of the article support to create a locally adjusted pressure so as to provide a local bending moment to locally bend the article.

As to claim 2, Taniguchi teaches the article is supported by at least three support pillars (52-54) (see figure 16).

As to claims 5-6, Taniguchi discloses the support pillars being piezo pads (54) and actuable.

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As to claim 7, Taniguchi teaches at least of the plurality of zones comprising an individual controllable clamp (see section [0175] and section [0184]).

As to claim 8, Taniguchi teaches a height sensor (2) for detecting a local height of the article.

As to claims 9-10, Taniguchi further teaches a clamp control unit (101) for adjusting the clamp pressure of the plurality of zones to attain a leveled article in response to at least one of a detected local height of the article and a detected image quality (see section [0039] and section [0185-0187]).

As to claim 11, Taniguchi teaches the plurality of zones having sectioned pressured zones to create a relatively different backfill gas pressure (see section [0175]).

5. Claims 1-2, 5-11 and 13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by McKinley et al (U.S.Pat. 5,724,121).

With respect to claims 1 and 13, McKinley et al (figure 11-12) discloses an article support (502) to support a flat article (28) to place in a beam path of radiation (see figure 1) and comprising all basic features of the instant claims including a clamp (see figure 12) to clamp the article to said article support wherein the clamp is provided with a plurality of zones (see abstract) located around a circumference of the article support to create a locally adjusted pressure so as to provide a local bending moment to locally bend the article.

As to claim 2, McKinley teaches the article is supported by at least three support pillars (524) (see figure 11).

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As to claims 5-6, McKinley et al discloses the support pillars being piezo pads (524) and actuatable.

As to claim 7, McKinley teaches at least of the plurality of zones comprising an individual controllable clamp (see col.18, lines 49-67).

As to claim 8, McKinley teaches a height sensor (508) for detecting a local height of the article.

As to claims 9-10, McKinley further teaches a clamp control unit (522) for adjusting the clamp pressure of the plurality of zones to attain a leveled article in response to at least one of a detected local height of the article and a detected image quality.

As to claim 11, McKinley et al teaches the plurality of zones having sectioned pressured zones to create a relatively different backfill gas pressure (see figure 11).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3-4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable either over Taniguchi et al (US 2004/0080734 A1) or McKinley et al (U.S. Pat. 5,724,121).

8. With respect to claims 3-4, Taniguchi or McKinley discloses a lithographic projection apparatus comprising substantially all of the limitations of the instant claims including the article support having a plurality of support pillars, as discussed above. Taniguchi et al/or McKinley

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does not expressly disclose that the article support consists of three pillars or consists of four support pillars. However, for example, Taniguchi et al suggests that a plurality of article support are provided at an interval which is sufficient to support the article (see section [0175]). In view of such teachings, it is the Examiner's position that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the lithographic projection apparatus of Taniguchi or McKinley, consisting of three or four support pillars so that it is possible to secure an excellent flatness of the article and thus the quality of the images to be printed is greatly improved.

9. As to claim 12, Taniguchi or McKinley discloses substantially all basic features of the instant claims except for the article/or substrate being a reticle. Since it is well known per se that the reticle/mask in a lithographic projection apparatus has the problem of deformation/ or bending/undulation due to the gravity and thermal expansion as the substrate/wafer, it would have been obvious to a skilled artisan to utilize the support as taught by Taniguchi or McKinley for supporting the reticle. The purpose of doing so would have been to prevent the deformation/bending of the reticle and whereby the throughput of apparatus is improved.

Prior Art Made of Record

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

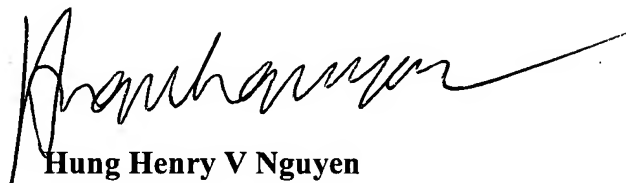
Sandstrom (U.S.Pat. 6,529,266); Sakai et al (U.S.Pat. 4,737,824) and Taniguchi et al (U.S.Pat. 4,666,291) disclose surface shape control device, each of which comprises substantially all of the structures as set forth in the instant claims.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hung Henry V Nguyen
Primary Examiner
Art Unit 2851

hvn
12/9/04